

Attorney Docket No.: 2002B140/2

REMARKS

1. The election of Group with the species of claims 1 and 4 is confirmed.
2. The abstract length was objectionable and was amended to a shortened version in the RESPONSE TO NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL) filed March 16, 2004.
3. The disclosure was objected to for use of confusing terms in the examples wherein both ratio and molar percent were used. The above amendment to the specification corrects the objectionable items consistent with the values given in the tables following the respective examples.

As mentioned above in the Support for Amendment to the Specification, the amending language is consistent with the data in the tables accompanying each amended example and removes the confusing term "ratio". Further explanation concerning the precatalyst and catalyst portions and preparations are provided in paragraphs [00213] and [00214].

- 4., 5. Claims 1 and 4 were provisionally rejected for obviousness-type double patenting over copending application 10/86951. Responsive thereto, enclosed is an appropriate terminal disclaimer to overcome the rejection.
- 6., 7. Applicants are unable to determine whether the reference qualifies as prior art and do not admit same. Nevertheless, the following remarks are provided to distinguish the reference.

Claims 1 and 4 were found unpatentable under 35 USC 103(a) over Sun et al., US 6,800,700 ("Sun"). Sun discloses a propylene polymerization at 50 degrees C using (Tetramethylcyclopentadienyl) dimethylsilyl-t-butylamido) titanium dichloride and Dimethylsilylbis(1-indenyl) zirconium dichloride with MAO to provide a crystalline powder polymer coated on a sticky amorphous polymer as given therein at Example 4.

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Sun

Other copolymers are taught by Sun although the presently claimed properties are not reported or suggested. Also taught is flowing dissolved powder polymer into the sticky amorphous polymer reactor (Sun at column 4, lines 55-58 and claims 2-6). The rejection asserts that, even if the claimed properties were not inherent in the reference, the skilled artisan would have found the present invention obvious. Applicants respectfully traverse the rejection with respect to the amended claims because the claimed properties are not present in the powder-coated sticky amorphous particles of Sun. Further review of Sun, compared to the amended claims, discloses the shortcomings of the reference.

Sun is directed to using two otherwise unusable materials. That is, combining an amorphous polymer so sticky it can't be readily retrieved from the reactor, and a crystalline polymer with particles too fine to be otherwise useful. Sun is motivated to operate the process therein at as low a temperature as possible because of heat transfer problems associated with the polymer sticking to the wall (See Sun at column 2, line 52 to column 3, line 3). Thus the skilled artisan is led to operate the Sun process at relatively low temperature as was done by Sun, always at 50 degrees C (see the Sun Examples).

Sun is also driven to solving the sticky polymer problem rather than providing a polymer with tack *and strength* as is done by the present invention. Accordingly, Sun teaches merely adding an additional catalyst (or dissolved polymer) to the amorphous polymer production at the normal operating conditions -- 50 degrees C (no pressures are given). Although Sun teaches a broad range of amorphous polymer molecular weight (Mw), (Sun at column 3, line 36 and column 4, line 22), the skilled artisan readily recognizes that the polymers formed according to the full teaching of Sun have molecular weights in the high end of that range which are entirely amorphous *and unbranched*.

Furthermore, while Sun offers no suggestion of the molecular weight of the powder coating polymer particles, the skilled artisan again will recognize that it is a high molecular weight material when operated at the 50 degrees C polymerization temperature of the amorphous production process. Thus the polymer combination of Sun is expected to have a net molecular weight above those of the claimed ranges.

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The Invention

The invention as now claimed is distinguished from and unobvious over the teachings of Sun because:

- (i) the inventive polymers have tack;
- (ii) the inventive polymers are branched, providing strength properties; and
- (iii) the inventive polymers are a homogeneous polymer or a homogeneous polymer composition.

The claims are amended for clarity to include at least a minimal level branching index g' of 0.4 as given in the specification paragraphs [0025]-[0027]. This distinguishes the polymers prepared according to Sun which will have little or no branching, typical of amorphous polymer:

(a) in Sun, two separate polymers are prepared, one stuck onto the other so no tack at all is available from the powder coated polymer particles, thus failing the Dot T-Peel element of the claim; and

(b) the polymerization temperature and conditions (to the extent given in Sun) indicate little or no branching, thus failing the g' element of the claim.

The powdery coated particles of Sun are not only a different polymer material than the claimed polymers, but also will not function to meet the Dot T-Peel test and will not have the strength properties of the invention such as those having a branching index as claimed. The Examiner is directed to the present specification at paragraphs [00103] to [00113], especially paragraph [00106] which addresses the desirability of an operating window to achieve the branching of the invention.

While the process type is also a factor deciding process temperature, the Examples were operated at a temperature greater than 50 degrees C and other conditions to ensure a low molecular weight, homogeneous, branched product, as given in most of the tables following

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the polymerization examples. The adhesive strength as given in the subsequent tables of the examples provide information on the strength provided by these samples in other tests and not available without branching.

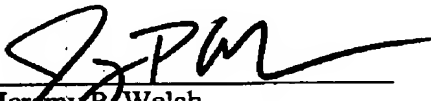
Clearly the polymers of Sun do not meet the elements of the claimed invention because they are different molecularly, and because they do not meet the property requirements of the claims. See especially the high Dot T-Peel claims 58 and 95, the strength property claim 65, and the bimodal comonomer claim 114 for further distinction from Sun.

Reconsideration and allowance of the claims as amended is respectfully requested.

Applicants invite the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been presented to the Examiner's satisfaction.

Respectfully submitted,

31 August 2005
Date


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